Welcome to this course! The primary goal of the course is to provide an introduction to mathematical tools and applications widely used in economics. We will focus on models of economic equilibrium, multivariate optimization, and the classic microeconomics of individual and firm-level optimization. We’ll close with the basics of general equilibrium theory.

I take elementary differential calculus, elementary integration, basic matrix/linear algebra (addition, multiplication, a little inversion), and univariate unconstrained optimization for granted.

OFFICE HOURS
Gladly by appointment.

COURSE MATERIAL
The two required textbooks for this course are:

TENTATIVE SCHEDULE
Week 1 (Aug 25): Nature of Mathematical Economics
C/W Chapter 1, 2.1, 2.4, 3.1, 3.2, 9.1, 9.2

Week 2 (Sep 1): Equilibrium analysis in economics, Explosive Growth
C/W Chapter 8.1 – 8.6, 9.3 – 9.5

Week 3 (Sep 8): Multivariate Unconstrained Optimization
C/W Chapter 11.1 – 11.6
*Homework assignment 1 due*

Week 4 (Sep 15): Constrained Optimization
C/W Chapter 12.1 – 12.5

Week 5 (Sep 22): Production Functions, Envelope Theorem
C/W Chapter 12.6, 13.1, 13.5, 13.6
*Homework assignment 2 due*

Week 6 (Sep 29): Consumer Theory 1
J/R Chapter 1

Week 7 (Oct 6): Consumer Theory 2
J/R Chapter 2
*Homework assignment 3 due*
Week 8 (Oct 13): Midterm exam

Week 9 (Oct 20): Consumer Theory 3: Intertemporal Choice
Lecture Slides

Week 10 (Oct 27): Theory of the Firm 1
J/R Chapter 3

Week 11 (Nov 3): Theory of the Firm 2
J/R Chapter 3
*Homework assignment 4 due*

Week 12 (Nov 10): Partial Equilibrium
J/R Chapter 4

Week 13 (Nov 17): General Equilibrium 1
Lecture Slides (further reading J/R 5.1)
*Homework assignment 5 due*

Week 14: Thanksgiving recess

Week 15 (Dec 1): General Equilibrium 2 & Review Session

Final Exam: Thursday December 8 from 7:20 pm to 10:00 pm

**GRADING**
Your final grade is based on an in-class midterm during week 8 and a final exam on Thursday December 10th. I will give more details regarding the format of those exams. There will also be 5 graded homework assignment. Homework assignments will need to be handed in electronically as stated in above’s schedule. The weighting will be as follows:

- Homework assignment: 30%  (6% each)
- Midterm: 30%
- Final exam: 40%

**STUDENTS WITH DISABILITIES**
Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit http://ds.gmu.edu/ for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. I am glad to make accommodations for students with disabilities. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474
ACADEMIC INTEGRITY
It is expected that students adhere to the George Mason University Honor Code as it relates to integrity regarding coursework and grades. The Honor Code reads as follows: “To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the University Community have set forth this: Student members of the George Mason University community pledge not to cheat, plagiarize, steal and/or lie in matters related to academic work.” More information about the Honor Code, including definitions of cheating, lying, and plagiarism, can be found at the Office of Academic Integrity website at http://oai.gmu.edu